

### **REMARKS**

Prior to this Response, claims 1-55 were pending in this application. By the present communication, claim 2 has been cancelled without prejudice, no claims have been added and claims 1, 3, 9, 10, 14-16, 24, 25, 43, 46, 47 and 55 have been amended to define Applicants' invention with greater particularity. The amendments add no new matter, being fully supported by the Specification and claims. Accordingly, claims 1 and 3-55 are presently pending.

#### **The Objection to the Claims**

Claim 1 is objected to for containing an informality in providing the definition of BAC after second occurrence of the abbreviation. To overcome the objection, claim 1 has been amended to delete the definition from line 6 and add the definition at line 1 prior to first occurrence of the abbreviation, as recommended by the Examiner. In view of the amendment to claim 1, Applicant submits that the objection to the claims has been overcome and reconsideration and withdrawal of the objection are respectfully required.

#### **The Rejection Under 35 U.S.C. § 112, Second Paragraph**

Applicant respectfully traverses the rejection of claims 1-55 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. With regard to claims 1, 25 and 43, the Examiner asserts that the phrase "artificial" is unclear because it allegedly cannot be determined whether the transformation step requires that the cell be made competent for transformation or whether cells naturally competent for transformation are encompassed. Since the transformation step requires only that the host cell is naturally competent for transformation by a BAC, claims 1, 25 and 43 have been amended to delete the term "artificial" and to recite instead that the host cell "is naturally capable of being transformed and undergoing DNA recombination." With regard to claim 1, the Examiner also asserts that that method steps do not include any steps that relate back to the preamble, which indicates that the method is used for identifying an essential

chromosomal gene. To overcome the rejection, as required by the Examiner the subject matter of former claim 2 (now cancelled) has been incorporated into claim 1 by reciting: "obtaining the identity of the essential chromosomal gene in the test organism by locating a gene in the known segment of DNA of the haploid test organism that contains the transposon-mutagenized DNA", thereby incorporating into claim 1 "a step for the identification of essential genes".

The Examiner further asserts that use of "identifying" in two separate places in claim 1 renders unclear the metes and bounds of the phrase "the identifying" in dependent claims 3 and 9. To clarify the meaning of the dependent claims, the term "the identifying" in claim 3 has been replaced by the phrase "obtaining the identity of the essential chromosomal gene" and in claim 9 the phrase at issue has been replaced with the phrase "identifying one or more of the haploid test cells that contain transposon-mutagenized DNA in an essential chromosomal gene therein". Applicants submit that the amendments clarify in each case what is being identified, thus overcoming the grounds for the rejection of claims 3 and 9.

With regard to claim 10, the Examiner asserts that the metes and bounds of the phrase "selectively non-permissive" are unclear because it is unknown what the selectivity pertains to. To address the possible ambiguity of the term at issue, as suggested by the Examiner, claim 10 has been amended to delete the term "selectively," thus rendering the grounds for the rejection moot.

With regard to claim 14, which depends from claim 1, the Examiner asserts that the phrase "the identified essential chromosomal gene" is unclear because claim 1 fails to provide antecedent basis for the phrase. Applicants submit that the amendment to claim 1 adding a step that includes the phrase "obtaining the identity of the essential chromosomal gene" provides sufficient antecedent basis for the phrase at issue, thus removing the grounds for the rejection.

In addition, the Examiner asserts with regard to claims 14-16 that the phrase "the known segment of DNA in the host cell" is unclear because there are two known segments of DNA that are in the host cell. However, Applicants submit that the known

genomic sequence of the host cell is not referred to in the claims as a "segment of DNA" so that those of skill in the art would know that the phrase at issue refers to the "known segment of DNA" from the test cell or pathogenic bacterium whose essential gene is sought to be identified. However, for clarity, Applicants have amended claims 14-16 to refer to "the known segment of DNA *from* the test cell" or "*from* the pathogenic bacterium" to emphasize that the phrases refer to the segment inserted into the BAC and passed on to the host cell to make the merodiploid host cell.

In addition, the Examiner has questioned the reason for deletion of the term "identified" from claim 16. By the present communication, the term "identified" has been restored to claim 16, its deletion being the result of an inadvertent error. Claims 14 and 16 are intended to have parallel claim language except for the different in percent identity recited in each of the claims.

With regard to claim 24, the Examiner asserts that the phrase "insertion into the merodiploid test cell" lacks antecedent basis in claim 23. To clarify the meaning, claim 24 has been amended to replace the phrase at issue with the phrase "transformation of the haploid host cell", thereby following the convention throughout the claims of referring to the host cell as "haploid" prior to the transformation and "diploid" after its transformation with the BAC.

With regard to the rejection of claim 25 as vague indefinite due to alleged lack of clarity regarding the metes and bounds of the term "suitable culture medium", Applicant submits that those of skill in the art would understand that "suitability" of the culture medium is not a relative concept, but is determined by selection of the host cell. In other words, a suitable culture medium for a host cell is one in which the particular host cell is customarily successfully cultured. As illustrated for the case where the host cell is *E. coli*, the suitable culture medium is Luria broth at 30° C (Specification, paragraph [0062]). Those of skill in the art would also understand that where the transposon is operatively linked to an antibiotic resistance gene, the culture medium would additionally include the antibiotic for which the resistance gene provides resistance to select for those cells that have incorporated the transposon. Similarly, in the case where the transposon is

temperature sensitive (e.g. tsTn), the environmental condition introduced is elevated temperature (e.g. of the culture medium) as illustrated in Example 2.

Thus, Applicant respectfully submits that those of skill in the art would understand that in claim 25, the suitable culture medium is determined by selection of the host cell used and is separate from introduction of the "environmental condition" to which the transposon-containing BAC is sensitive to disrupt replication of the BAC. Since haploid cells have been cultured for decades, Applicants submit that those of skill in the art would not find the term "suitable culture medium" in the least vague or confusing. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 25 on this point.

Further with regard to claim 25, the Examiner asserts that the lack of a preamble introduces lack of clarity since the object of the method is allegedly unknown. To overcome the rejection, claim 25 has been amended to introduce the new preamble "A method of screening compounds for putative antibiotic activity against a pathogenic bacterium whose genome is known" based on the Examiner's explanation of the previously alleged lack of clarity in the phrase "whose genome is known to select" which lack of clarity Applicants did not understand and resulted in deletion of the previous preamble.

With regard to claims 25 and 43, the Examiner asserts that there is insufficient antecedent basis for the term "in the haploid test cell". To overcome the rejection, claim 25 has been amended to recite: "inserted into the test cell by the BAC" The amendment clarifies the claim language while following the convention that the haploid host cell is referred to as "the test cell" after the BAC is inserted therein. Antecedent basis for the phrase "the test cell" is provided in line 9 of claim 1. Claim 43 has been amended to recite: "obtaining the identity of the essential chromosomal gene by determining which gene in the known segment of DNA of the haploid test organism inserted into the BAC was disrupted by the transposon." Applicant submits that antecedent basis for the phrase "the haploid test organism" in claim 43 is found in line 4.

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With regard to claim 46, the Examiner asserts that the metes and bounds of the phrase "introduction of the BAC into the test cell is unclear, since the BAC is introduced into the haploid host cell. Accordingly, as suggested by the Examiner, claim 46 has been amended to recite: "the transposon is inserted randomly into the BAC *in vitro* prior to introduction of the BAC into the haploid host cell."

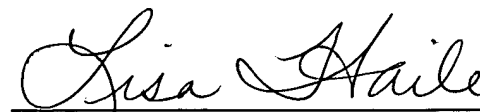
With regard to claim 47, the Examiner asserts that the phrase "known segment of DNA is linearized prior to introduction into the test cell" lacks antecedent basis because the BAC that comprises the known segment of DNA is inserted into the haploid host cell. Accordingly, as recommended by the Examiner, claim 47 has been amended to recite: "the BAC is linearized prior to introduction into the host cell", thus overcoming the grounds for the rejection of claim 47.

In view of the above amendments and remarks, Applicant submits that the amended claims meet all requirements under 35 U.S.C. § 112, second paragraph, and reconsideration and withdrawal of the rejection are respectfully requested. There being no cited art, Applicant respectfully requests passage of the claims to allowance.

If the Examiner would like to discuss any of the issues raised in the Office Action, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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